·标准·方案·指南·

儿童社区获得性肺炎管理指南(试行)(下)

中华医学会儿科学分会呼吸学组
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小结 指南要点提示及其循证水平

本指南在循证基础上,较广泛参阅当今小儿社区获得性肺炎(CAP)指南及其相关文献,尽可能结合我国国情及贴近临床、贴近基层。以下是指南各部分的要点及其循证水平。

一、社区获得性肺炎定义

CAP 是指原本健康的儿童在医院外获得的感染性肺炎,包括感染了具有明确潜伏期的病原体而在入院后潜伏期内发病的肺炎。

二、病原学

病原包括细菌、病毒、支原体、衣原体、真菌、原虫等,本指南未涉及结核分枝杆菌、真菌和原虫。必须注意小儿 CAP 往往有混合病原感染。

1. 年龄对小儿 CAP 病原是最好的提示[Ⅱ];

2. 病毒是婴幼儿 CAP 很常见病原[Ⅱ];

3. 单纯病毒病原在小儿 CAP 中占 14% ~35%[Ⅱ];

4. 病毒病原重要性随年龄增长而下降,但须警惕新病毒或变异病毒成为 CAP 病原的可能性,如 SARS 冠状病毒/新亚型人流感病毒、人禽流感病毒等[Ⅱ];

5. 肺炎链球菌(SP)是各年龄期小儿 CAP 最常见细菌病原,流感嗜血杆菌是 3 个月 ~5 岁婴幼儿 CAP 又一重要细菌病原[Ⅱ];

6. 混合病原感染约占 CAP 的 8% ~40%[Ⅱ];

7. 提倡多病原联合检测,以明确我国小儿 CAP 病原构成谱。即使在发达国家,仍有 20% ~60% 病例病原不明[Ⅱ];

8. 要注意鉴别结核分枝杆菌引起的肺部结核。

三、临床特征

1. <3 岁婴幼儿若腋温≥38.5℃、有呼吸增快和胸壁吸气性凹陷,应多考虑细菌性肺炎[B];

2. 诊断年长儿 CAP,呼吸困难的病史比临床各种体征更有帮助;

3. 学龄前儿童存在喘鸣,原发性细菌性肺炎的可能性不大[B]。

四、胸 X 线片诊断评估

1. 对轻度无合并症的急性下呼吸道感染患儿不必常规拍摄胸 X 线片(简称胸片)[A];

2. 根据临床征象考虑 CAP 的患儿应予以摄胸片,存在呼吸困难的发热婴儿必须拍摄胸片[Ⅲ];

3. 胸部 X 线征象对 CAP 病原学的提示性差,也无助于治疗的决策[Ⅱ];

4. CAP 患儿有肺叶不张、或有肺部圆形病灶、或症状持续者应拍胸片随访[C]。

五、实验室检查

1. CAP 患儿应尝试作多病原联合检测,尤其是住院患儿[C];

2. 对所有疑为细菌性肺炎的患儿应送检血培养[B];

3. 保存急性期血清,急性期未能明确病原者应获取恢复期血清标本以双份血清检测病原微生物抗体[B-];

4. 对所有 18 个月龄以下婴儿均应取鼻咽抽吸物进行病毒抗原快速检测或(和)病毒分离[B];

5. 明显胸腔渗液时,应抽取送检涂片和培养,并保留作病原体抗原检测[B]。

六、严重度评估

1. CAP 住院指征,有下列 1 项者:

(1)呼吸空气条件下,$SaO_2 \leq 0.92$(海平面)或≤0.90(高原)或有中心性紫绀;

(2)呼吸空气 RR≥70 次/ min(婴儿),≥50 次/ min(年长儿),除外发热、哭吵等因素的影响;

(3)呼吸困难:胸壁吸气性凹陷、鼻扇;

(4)间歇性呼吸暂停,呼吸呻吟;

(5)持续高热 3 ~5 d 不退者或有先天性心脏病、先天性支气管肺发育不良、先天性呼吸道畸形、重度贫血、重度营养不良等基础疾病者;

(6)胸片等影像学证实双侧或多肺叶受累或肺叶实变并肺不张、胸腔积液或短期内病变进展者;

(7)拒食或并有脱水征;

(8)家庭不能提供恰当充分的观察和监护,或 2 个月龄以下 CAP 患儿。

2. 收住或转至 ICU 的指征,具备下列 1 项者:

(1)吸入氧浓度(FiO_2)≥0.6,$SaO_2 \leq 0.92$(海平面)或 0.90(高原);

(2)休克和(或)意识障碍;

(3)RR 加快、脉速伴严重呼吸窘迫和耗竭征象,伴或不

通信作者:陆权,200040 上海交通大学附属儿童医院呼吸科(Email:luquan-sh@vip.sina.com)

伴 $PaCO_2$ 升高；

(4)反复呼吸暂停或出现慢而不规则的呼吸。

七、治疗

1. 一般治疗

(1)轻度 CAP 可以在门诊/家中治疗，由社区/乡镇医疗中心管理，但须定期访视，治疗 48 h 无效或出现病情恶化征象者必须及时转诊治疗[D]；

(2)家庭治疗的基本条件是家长须有 CAP 护理、病情观察的知识[D]；

(3)呼吸空气条件下，$SaO_2 \leqslant 0.92$ 或 $PaO_2 \leqslant 60$ mm Hg (1 mm Hg = 0.133 kPa)患儿，应予鼻导管/面罩/头罩吸氧，使 SaO_2 维持在 0.92 以上[A]；氧疗患儿应每 4 小时监测体温、脉率、RR 和 SaO_2[D]；

(4)烦躁不安是患儿缺氧的重要症状。应避免不必要操作以减少氧耗；

(5)经鼻胃管可能影响患儿呼吸，因此在危重儿应予避免，尤其对鼻通道狭小的婴儿。如必须使用，应选择尽可能细的胃管[D]；

(6)如必须静脉补液，总液量按基础代谢正常需要量的 80% 计算，应监测血清电解质[C]；

(7)胸部物理治疗无确切益处，不必常规采用[B]；

(8)可以使用退热镇痛药，保持患儿舒适、有利咳嗽。

2. 抗病原微生物治疗

(1)无论发达国家或发展中国家，CAP 初始治疗均是经验性的。3 个月以下小儿有沙眼衣原体(CT)肺炎可能，而 5 岁以上者肺炎支原体(MP)肺炎、肺炎衣原体(CP)肺炎比率较高，故均可首选大环内酯类[D]，4 个月 ~ 5 岁尤其重症者，必须考虑肺炎链球菌 CAP，应该首选大剂量阿莫西林或阿莫西林/克拉维酸，备选有头孢克洛、头孢羟氨苄、头孢丙烯、头孢呋辛、头孢地尼、头孢噻肟、头孢曲松等[B]，克拉霉素、阿奇霉素作为替代选择[D]；

如考虑金葡菌肺炎，应首选苯唑青霉素、氯唑青霉素[B]。考虑细菌合并 MP 或 CP 肺炎，可以联合使用大环内酯类 + 头孢曲松/头孢噻肟[C]；

(2)CAP 患儿口服抗生素是安全有效的[A]。仅在重症肺炎或因呕吐等致口服难以吸收时才考虑胃肠道外抗生素疗法[D]。SAT 有良好的推广前景[D]；

(3)PRSP 对 CAP 结局无明显影响，但须加大青霉素/阿莫西林剂量[B-]；

(4)一旦明确病原微生物，应即开始针对性强的目标治疗[B+]；

(5)初始治疗 48 h 后应作病情和疗效评估，CAP 抗生素疗程一般用至热退且平稳、全身症状明显改善、呼吸道症状部分改善后 3 ~ 5 d[C]；

(6)病毒性 CAP 的一般性支持疗法、对症疗法和加强护理等仍居重要地位，而特异性病因治疗尚有局限，例如流感病毒、RSV、CMV 等。

八、疫苗预防

已有百日咳疫苗、流感病毒疫苗、肺炎链球菌疫苗、b 型流感嗜血杆菌疫苗等，疫苗的预防接种对减少 CAP 患病率效果肯定。

[附件]

附件 1　CAP 相关实验室检查方法

此部分内容主要供病原学研究时参考，并不常规推荐在临床开展。

儿童 CAP 病原特异性诊断方法大致分为 3 种：(1)病原培养分离；(2)免疫学特异性抗原和抗体检测；(3)应用聚合酶链反应(PCR)技术对病原特异性基因片断进行检测，这是目前直接检测病原的较好方法，对于许多生长周期长、培养条件高的病原如病毒、衣原体、支原体、军团菌、结核分枝杆菌以及百日咳杆菌等是较实用的方法，其原理是对病原特异性基因片段进行扩增和检测。目前基因片段引物设计已成为可能、部分已有商品试剂盒，快速诊断优势使其具有临床指导价值，但特异性仍待提高，临床上也尚不能常规使用。常用的 PCR 及相关技术，包括逆转录 PCR(RT-PCR)、多重 PCR、套式 PCR(nPCR)和实时 PCR 等，增加了检测敏感性并简化了操作，为 CAP 病原学的诊断开拓前景。

一、病毒病原

1. 培养分离　感染肺组织、支气管肺泡灌洗液、鼻咽分泌物病毒培养、分离仍是病毒病原诊断的可靠方法，因其证实被检标本中存在活的、能在体外成功复制的病毒，但病毒分离无早期诊断的价值。

2. 免疫学检测　快速病原诊断对早期明确病毒病原、及时治疗和减少抗菌素滥用至关重要。

(1)病毒抗原检测　较成熟方法有免疫荧光法检测呼吸道脱落细胞内的病毒抗原、酶免疫法或金标法检测呼吸道分泌物中病毒特异抗原等。直接免疫荧光法(DFA)商品试剂盒目前在国、内外实验室普遍使用，快速检测呼吸道 7 种病毒抗原，包括呼吸道合胞病毒、腺病毒、甲型和乙型流感病毒、副流感病毒 1、3 型和 2 型，有较为稳定的敏感性和特异性，是 CAP 病毒病原诊断较为经典方法，敏感性高达 80%。文献[126]比较病毒培养和 DFA 对儿童社区获得性下呼吸道感染的病毒病原学诊断价值，共检测 1069 份鼻咽拭子标本，病毒病原阳性占 30%，其中 RSV 49%、副流感病毒 15%、甲型流感病毒 4%、鼻病毒 8%、腺病毒 4%、肠道病毒 4%、乙型流感病毒 1%。与病毒培养相比，DFA 的敏感性 84%，特异性 99%，阳性预示率 96%，研究表明 DFA 能有效地指导临床。间接免疫荧光法先是用未标记的第一抗体反应、再用标记的针对第一抗体的抗体，这从理论上可提高检测的敏

感度,但也因此可能带来非特异性反应。检测病毒抗原的优点是简便、可早期快速诊断,抗原阳性很大程度代表有传染性,还可检出难以培养分离的病毒。

(2) 特异性抗体检测 经典的方法有免疫荧光试验(IFA)、酶联免疫吸附试验(ELISA)等。特异性抗病毒 IgM 升高对早期诊断有一定的价值,继则 IgG 抗体升高,更有价值的是抗体滴度进行性升高,急性期和恢复期双份血清(间隔 2 ~ 4 周)特异性 IgG 抗体的 4 倍升高可作为某病毒感染的诊断和血清分型指标,但双份血清抗体测定对早期诊断的价值很小,某些特殊人群如小婴儿、免疫功能低下儿病毒感染时,不能或延迟产生特异性抗体而致假阴性。应用糖皮质激素等免疫抑制药也可影响特异性抗体的阳性检出率。

(3) 病毒特异性基因检测 使用 PCR、RT-PCR、nPCR、多重 PCR、实时 PCR 等检测呼吸道分泌物中病毒基因片段,如 TagMan 逆转录 PCR 对 RSV 病原的检测,LightCycler 逆转录 PCR 检测流感病毒;采用多重逆转录 PCR 方法对 7 种常见呼吸道病毒联合检测[127-128]和人类偏肺病毒(hMPV)检测[129-130]。此外,还有一些包括呼吸道病毒在内的联合检测组合,例如用于肺炎伴有腹泻患儿的肠病毒-甲型流感病毒-肝炎病毒甲、乙、丙、丁、戊型等组合,又如实时多重 PCR 以及多重 nPCR 方法同时检测腺病毒、轮状病毒、Norwalk 病毒。对于 SARS 冠状病毒、高致病性 H5N1 人禽流感病毒诊断方面主要是特异性抗体测定及定量 PCR 技术检测病毒特异性基因片断。PCR 技术敏感性极高,甚至可以检测出单个分子 DNA,特异性也强,有早期诊断价值,但实验环境要求高、操作必须严格,以避免假阳性。要作出某一病毒是小儿 CAP 病原的结论,必须结合临床、流行病学、胸片特征和其他实验室资料。

二、细菌病原

1. 培养分离 是确定细菌病原最常用方法,金标准要求标本应采集自感染肺组织,肺穿刺标本细菌培养阳性率在非洲儿童肺炎者达 79%,但常规肺穿刺显然不切临床实际,更不适合 CAP 初始治疗的患儿。直接取痰液或用 3% ~ 5% 高渗盐水诱导获取痰液或经气管负压抽取痰液标本送培养和涂片染色(可以发现胞内菌),所得结果在一定程度上对临床有指导意义。鼻咽分泌物培养有细菌生长并不能确立该细菌就是肺炎致病菌,当怀疑有特殊病原体或耐药菌感染致肺炎或经验治疗无效时,应尽可能采集合格痰标本(可结合痰液细胞学涂片判断:中性粒细胞≥25 个/低倍视野,上皮细胞<10 个/低倍视野为合格标本)以明确病原。疑有侵袭性感染的 CAP 住院患儿尤其婴幼儿,应及时送检血培养。一项对 840 例 0 ~ 12 岁小儿肺炎者的研究表明,胸腔积液培养阳性率 17.7%[131],因此对胸腔积液、积脓者应作胸腔穿刺以获取积液或脓液标本培养,对明确肺炎病原学有一定价值。

2. 免疫学检测

(1) 细菌抗原检测 肺炎患儿尿标本肺炎链球菌和流感嗜血杆菌抗原检测已有报道[132],快速免疫层析膜肺炎链球菌尿抗原诊断试剂盒也已通过美国 FDA 认证,这些方法与传统的培养方法相比可提高检出率,抗原在肺炎链球菌感染后数周内持续存在,但特异性差,带菌者和感染者均可能出现尿抗原阳性,不能作为 CAP 确诊试验[3,133]。

(2) 血清抗体检测[134-136] 检测血抗肺炎链球菌、流感嗜血杆菌荚膜多糖抗体水平,或检测血清肺炎链球菌抗原抗体复合物。迄今尚无一种检测方法可独立用于诊断 CAP 并有足够高的敏感性和特异性,在年幼儿价值更差。

3. 细菌特异性基因检测 采用荧光多重 PCR 检测细菌特异基因,如肺炎链球菌编码溶血素(ply)基因、流感嗜血杆菌编码细菌荚膜多糖(bex)基因。也有选择稳定的、广范围的细菌拓扑异构酶基因(gyrB/parE)序列,使用寡核苷酸阵列结合 PCR 扩增技术诊断 9 种呼吸道感染常见细菌病原等。

4. 结核分枝杆菌的相关检测 可参考中华医学会儿科学分会呼吸学组和中华儿科杂志编辑委员会制定的《儿童肺结核的临床诊断标准和治疗方案(试行)》[10]。

三、支原体、衣原体和嗜肺军团菌[137-138]

1. 培养分离 支原体和衣原体培养分离同样是诊断的金标准,但技术要求高、耗时较长、无早期诊断价值,故不推荐作为 CAP 常规诊断方法。

2. 免疫学检测 血清特异性抗体测定是目前临床诊断 MP、CP、CT 和嗜肺军团菌(LP)感染最常用的实验室证据。

(1) 特异性 IgM、IgA、IgG 测定 可用于 MP/CP/CT/LP 急性感染的诊断,感染后 1 周 IgM 就可升高,2 ~ 3 周达峰。检测方法有补体结合试验(CFT),免疫荧光试验(IFA),间接血凝试验(IHA)和酶联免疫吸附试验(ELISA)等。近年多采用颗粒凝集法(PA)测定 MP 抗体,值得注意其所测得的抗体 90% 为 MP-IgM,但也包含了 10% 左右的 MP-IgG,滴度 > 1:80 为阳性。但确诊 MP/CP 急性感染应强调双份血清(间隔 2 周),恢复期抗体滴度上升 4 倍或下降至原来的 1/4 有诊断价值;单份血清特异性 IgM 抗体滴度持续升高也有诊断价值,这包括 MP-IgM > 1:160、CP-IgG > 1:512、CT-IgM > 1:64、LP-IgG > 1:256,最好同时有 PCR 法 MP/CP/CT/LP 抗原阳性。目前国内在阳性标准上并不统一,这直接影响到诊断和资料间相互比较。MP 感染还可检测 MP-IgA 抗体,其出现较 IgM 稍晚,持续时间长,特异性强。检测 MP-IgG 无早期诊断价值,可供回顾性诊断,是病原学追踪的较好手段。

(2) 其他免疫学检测 MP 冷凝集素试验简单、快速,病后第 1 周末出现,3 ~ 4 周达峰,2 个月后消失,阳性标准为 ≥ 1:32。目前我国部分医疗单位仍在使用,但其敏感性、特异性较差。近几年发展起来的免疫印迹技术检测抗 MP/CP 抗体,特异性强且敏感性高。

(3) 抗原检测 ELISA 法检测呼吸道分泌物中 MP/CP/CT 抗原,检测尿中 LP 抗原,已有商品化试剂盒。单克隆抗体 DFA 检测 MP/CP/CT/LP 抗原是特异性强而又简便的病原检测方法,但敏感性有待提高。

3. 特异性基因检测 多数研究扩增 MP 特异性基因片

附件 2　CAP 常用抗微生物药物的剂量和用法[2-3,84-85,90-91]

抗微生物药物	剂量[mg/(kg·次)]	最大剂量(g/次)	给药间隔和给药途径
青霉素类			
青霉素 G(penicillin G)	常用剂量 2.5 万~5 万 U/(kg·次)		q 6 h 肌肉注射或静脉滴注
	大剂量 5 万~10 万 U/(kg·次)		q 6 h 肌肉注射或静脉滴注
青霉素 V(penicillin V)	8~12		q 6~8 h 口服
氨苄西林(ampicillin)	常用剂量 15~25	2	q 6~8 h 口服或肌注或静脉滴注
	大剂量 50~75		
阿莫西林(amoxicillin)	常用剂量 10~15	2	q 6~8 h 口服
	大剂量 25~30		
羧苄西林(carbenicillin)	25~50	2	q 6 h 肌肉注射或静脉滴注
美洛西林(mezlocillin)	75	3	q 6~8 h 肌肉注射或静脉滴注
哌拉西林(piperacillin)	25~50	2	q 6~8 h 肌肉注射或静脉滴注
苯唑西林(oxacillin)	25~50	2	q 6~8 h 静脉滴注
氯唑西林(cloxacillin)	12.5~25	2	q 6~8 h 静脉滴注
氨苄西林+舒巴坦(ampicillin/sulbactam)	2:1 注射剂(25/12.5)~(75/37.5)	(1/0.5)	q 6~8 h 静脉滴注
阿莫西林+克拉维酸(amoxicillin/clavulanic acid)	5:1 注射剂(25/5)	(1/0.2)	q 6~8 h 静脉滴注
	7:1 口服剂(20/2.85)~(30/4.29)	(1/0.143)	q 8 h 口服
替卡西林+克拉维酸(ticarcillin/clavulanic acid)	15:1 注射剂(50/3.34)~(75/5)	(3/0.2)	q 6~8 h 静脉滴注
	30:1 注射剂(30/1)~(50/1.7)	(3/0.1)	
哌拉西林+三唑巴坦(piperacillin/tazobactam)	8:1 注射剂	(2/0.25)	q 6~8 h 肌肉注射或静脉滴注
	(25/3.125)~(50/6.250)		
头孢菌素类			
头孢拉定(cefradine)	15~25	1	q 6~8 h 肌肉注射或静脉滴注或口服
头孢唑啉(cefazolin)	15~25	1	q 6~8 h 肌肉注射或静脉滴注
头孢羟氨苄(cefadroxil)	15~25	1	q 12 h 口服
头孢克洛(cefaclor)	10~15	0.5	q 8 h 口服
头孢丙烯(cefprozil)	15	0.5	q 12 h 口服
头孢地尼(cefdinir)	9~18	0.2	q 8~12 h 口服
头孢呋新(cefuroxime)	15~25	1	q 8 h 肌肉注射或静脉滴注
头孢噻肟(cefotaxime)	15~50	2	q 8 h 静脉滴注
头孢曲松(ceftriaxone)	50~80	2	q d 静脉滴注或肌肉注射
头孢哌酮(cefoperazone)	15~50	2	q 8 h 肌肉注射或静脉滴注
头孢他啶(ceftazidime)	15~30	2	
头孢哌酮+舒巴坦(cefoperazone/culbactam)	2:1 注射剂型 常用剂量(15/7.5)~(30/15) 大剂量(40/20)~(60/30)	(2/1)	q 8 h 静脉滴注
头孢吡肟(cefapime)	30~50	1.5	q 8~12 h 静脉滴注或肌肉注射
大环内酯类			
红霉素(erythromycin)	10~15	0.5	q 8 h 口服 q 12 h 静脉滴注
罗红霉素(roxithromycin)	3~5	0.15	q 12 h 口服
阿奇霉素(azithromycin)	10	0.5	q d 连服 3 d,停药 4 d 为一疗程
克拉霉素(clarithromycin)	5~10	0.5	q 12 h 口服
其他			
多西环素(doxycycline)	8 岁以上用 2.2	0.1	q 12 h 口服
万古霉素(cancomycin)	10~20	0.5	q 6~12 h 静脉滴注
利福平(cifampin)	5~10	0.3	2 次/d 口服
氨曲南(aztreonea)	15~50	0.5	q 6~8 h 肌肉注射或静脉滴注
亚胺培南(imipenem)	15~20	0.5	q 6 h 静脉滴注
美罗培南(meropenem)	10~20	0.5	q 8 h 静脉滴注
帕尼培南(panipenem)	10~20	0.5	q 8 h 静脉滴注
克林霉素(clindamycin)	10	0.45	q 8~12 h 口服或静脉滴注
甲硝唑(metronidazole)	12.5	0.5	q 12 h 口服

断,有编码 P1 蛋白基因、16SrRNA 基因和 ATP 酶操纵子基因。不同来源的标本应选择扩增不同的基因片段,如痰标本选择 16SrDNA 基因高度保守区,鼻咽吸取物和支气管肺泡灌洗液扩增 ATP 酶操纵子和 16SrDNA 基因高度保守区,肺组织则检测 P1 吸附蛋白基因。常用方法有:(1) nPCR 方法可增加敏感性。(2)多重 PCR 可同时检测多种病原,有报道多重 PCR 同时检测 MP、CP 和鹦鹉热衣原体。(3)实时 PCR 检测临床标本 MP,与 nPCR 敏感性一致,可定量监测扩增过程,并大大减少操作时间。(4)RNA 扩增技术的优点是敏感性高,因为 rRNA 在体内易降解,检测到此核苷酸提示标本中存在活的 MP。(5)RT-PCR 技术针对 16SrRNA 序列检测,可进一步将病原在属、种水平上鉴别。(6)转录介导扩增方法(TMA)检测沙眼衣原体、结核分枝杆菌。

由于小儿 CAP 病原的多元性和混合性,临床往往需要多种方法作多病原联合检测,而作出的病原学诊断应结合临床征象、流行病学、胸片、其他实验室检查等综合分析。

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参与审定人员(以姓氏笔画为序) 方莉雅 王亚亭 付文永 任小鄘 刘恩梅 江载芳 江澜 杨永弘 杨锡强 陈志敏 陈育智 陈爱欢 季伟 尚云晓 范永琛 洪建国 胡仪吉 赵顺英 徐佩茹 钱渊 董宗祈 鲁继荣

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· 会议 · 征文 · 消息 ·

全国儿童保健学术会议征文通知

中华医学会儿科学分会儿保学组、中华预防医学会儿童保健学会,《中华儿科杂志》、《中国儿童保健杂志》编辑委员会将于 2007 年 11 月 3 日 -4 日在重庆举办儿童保健学术会议。现将征文有关事宜通知如下:

1. 会议内容:将邀请 6 位国外专家、6 位国内专家作专题讲座;讨论儿童体格发育、儿童生长发育监测、环境与儿童健康、儿童行为问题、与儿童生长及生长障碍有关的遗传、代谢性疾病的筛查、儿童期肥胖、儿童早期营养与喂养问题、儿童食物过敏及防治对策、重要微营养素等重要问题。

2. 征文对象:各级从事儿童保健工作的医生、管理者以及儿科医生。

3. 会议征文范围:(1)儿童早期综合发展;(2)儿童生长发育监测及生长曲线图的应用;(3)儿童行为发育;(4)儿童早期营养与喂养;(5)儿童语言发育;(6)儿童肥胖症;(7)儿童食物过敏及防治对策;(8)儿童睡眠发育;(9)忽视与虐待儿童;(10)环境与儿童健康;(11)疾病儿童的营养;(12)其他相关内容。

4. 征文要求:(1)摘要:400 ~ 800 字 1 份,包括日的、方法、结果、结论四部分;(2)全文:按规范格式(包括前言、材料与方法、结果、讨论),2000 ~ 4000 字 1 份;(3)稿件用 word 文挡、宋体 5 号字;摘要与全文以纸质及电子文稿寄出(信请在信封上注明"征文"),地址:重庆医科大学附属儿童医院儿保科(邮编:400014),并发至 hy420@21cn.com (请在主题栏注明为"征文");(4)截稿日期:2007 年 8 月 15 日。

5. 联系方式:重庆医科大学附属儿童医院儿保科(邮编:400014);联系人:刘晓、胡燕;电话:023-63622764。